MATERIAL SAFETY DATA SHEET

SRM Supplier: National Institute of Standards and Technology
Standard Reference Materials Program
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SRM Number: 2584
MSDS Number: 2584
SRM Name: Trace Elements in Indoor Dust
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SECTION I. MATERIAL IDENTIFICATION

Material Name: Trace Elements in Indoor Dust

Description: SRM 2584 is composed of dust collected from vacuum cleaner bags used in the cleaning of indoor dwelling spaces.

Other Designations: Lead (plumbum) **in Dust**

Name	Chemical Formula	CAS Registry Number
Lead	Pb	7439-92-1

DOT Classification: Not regulated by DOT

Manufacturer/Supplier: It is available from a number of suppliers.

SECTION II. HAZARDOUS INGREDIENTS

Hazardous Components	Nominal Concentration	Exposure Limits and Toxicity Data*
Lead	1 %	OSHA TLV-TWA: 50 $\mu g/m^3$ (as Pb)
		OSHA TWA Action Level (8 h): 30 $\mu g/m^3$ (as Pb)
		ACGIH TLV-TWA: 0.05 mg/m^3 (as Pb)
		Woman, Oral: TD_{LO}: 450 mg/kg/6 years

*Exposure limits and toxicity data are given for lead which is classified as a potential carcinogen. The suggested ACGIH TLV-TWA for particulates not otherwise regulated is 10 mg/m^3 for total dust.

SECTION III. PHYSICAL/CHEMICAL CHARACTERISTICS

Lead
Appearance and Odor: White to gray powder
Relative Atomic Mass: 207.20
Density: 11.3 g/cm^3
Decomposition Point: 1740 °C
Melting Point: 328 °C
Solubility in Water: Insoluble
Solubility in Other Compounds: Soluble in nitric acid and hot sulfuric acid

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A

Autoignition Temperature: N/A

Flammability Limits in Air (Volume %): UPPER: N/A
LOWER: N/A

Extinguishing Media: Use regular dry chemical, carbon dioxide, water, or regular foam.

Special Fire Procedures: Move container from fire hazard if possible. Avoid breathing vapors or dust. Fire fighters should wear a self-contained breathing apparatus with full facepiece and operated in pressure-demand or other positive pressure mode.

Unusual Fire and Explosion Hazards: Lead is a negligible fire hazard when exposed to heat or flames.

SECTION V. REACTIVITY DATA

Stability: **X** **Stable** ____ **Unstable**

Conditions to Avoid: Avoid heat, flames, sparks, and other sources of ignition. Avoid incompatible materials.

Incompatibility (Materials to Avoid): Lead is incompatible with oxidizing materials, halogens, combustible materials, peroxides, metals, metal carbides, and acids.

See Section IV: *Fire and Explosion Hazard Data*

Hazardous Decomposition or Byproducts: Oxides of lead

Hazardous Polymerization: _____ **Will Occur** **X** **Will Not Occur**

SECTION VI. HEALTH HAZARD DATA

Route of Entry: **X** **Inhalation** _____ **Skin** **X** **Ingestion**

Health Hazards (Acute and Chronic): Lead and Lead Compounds: This material may be harmful by inhalation or ingestion and is irritating to the mucous membranes and upper respiratory tract. Absorption of large amounts of lead or lead compounds may cause a metallic taste, thirst, a burning sensation in the mouth and throat, salivation, abdominal pain with severe colic, vomiting, diarrhea, fatigue, or sleep disturbances. Other signs and symptoms of exposure include metal fume fever (an influenza-like illness), disorientation, tingling sensation, convulsions, or paralysis. Prolonged or repeated exposure to low levels of lead may result in an accumulation in body tissues and exert adverse effects on the blood, nervous system, heart, endocrine and immune systems, kidneys, and reproductive system. Lead may have reproductive effects or cause birth defects. It is also suspected as a potential carcinogen in animals.

Medical Conditions Generally Aggravated by Exposure: Blood disorders, nervous system disorders, gastrointestinal disorders, and respiratory disorders

Listed as a Carcinogen/Potential Carcinogen:

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens		X
In the International Agency for Research on Cancer (IARC) Monographs	X*	
By the Occupational Safety and Health Administration (OSHA)		X

*The IARC classifies lead and inorganic lead compounds as Group 2B: Possibly Carcinogenic to Humans.

EMERGENCY AND FIRST AID PROCEDURES:

Skin Contact: Lead is not absorbed through the skin. Remove contaminated shoes and clothing. Rinse affected area with large amounts of water followed by washing the area with soap and water. Obtain medical assistance if necessary.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Obtain medical assistance if necessary.

Inhalation: If inhaled, remove the victim to fresh air. If breathing is difficult, give oxygen; if victim is not breathing, give artificial respiration. Obtain medical assistance if necessary.

Ingestion: If ingested, wash out mouth with water. **DO NOT** induce vomiting. Obtain medical assistance immediately.

TARGET ORGAN(S) OF ATTACK: The blood, heart, nervous system, endocrine system, respiratory system, immune system, and kidneys. This material is also a *teratogen* (causes fetal damage).

SECTION VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in Case Material Is Released or Spilled: Dust particles can be gathered and placed into containers for later disposal. Residue should be cleaned up using a high-efficiency particulate filter vacuum.

Waste Disposal: Follow all federal, state, and local regulations.

Handling and Storage: Store in a air-conditioned or similar cool and dry environment, away from direct sunlight and fumes.

SECTION VIII. SOURCE DATA/OTHER COMMENTS

Sources: MDL Information Systems, Inc., MSDS *Lead*, June 2, 1999.

Disclaimer: Physical and chemical data contained in this MSDS are provided for use in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data on the MSDS. The certified values for this material are given only on the NIST Certificate of Analysis.